

INTRODUCTION

3G is the third generation of tele standards and technology for mobile networking, superseding 2.5G. It is based on the International Telecommunication Union (ITU) family of standards under the IMT-2000.[1]

3G networks enable network operators to offer users a wider range of more advanced services while achieving greater network capacity through improved spectral efficiency. Services include wide-area wireless voice telephony, video calls, and broadband wireless data, all in a mobile environment.

History

- The first pre-commercial 3G network was launched by NTT DoCoMo in Japan branded FOMA, in May 2001 on a pre-release of W-CDMA technology. The first commercial launch of 3G was also by NTT DoCoMo in Japan on October 1, 2001.
- The first European pre-commercial network was at the Isle of Man by Manx Telecom, the operator owned by British Telecom, and the first commercial network in Europe was opened for business by Telenor in December 2001
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THE FEATURES OF 3G

UMTS (Universal Mobile Telecommunications System).

- Supports greater voice
- data capacity large
- higher data transfer
- the lowest cost
- rate at both in the rural and urban areas

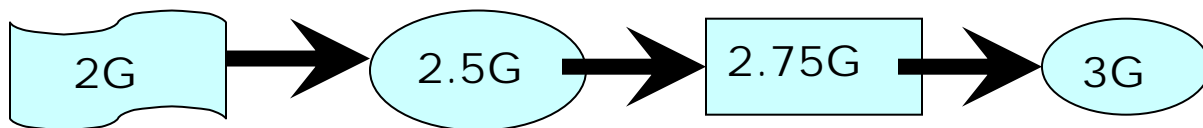
WHY 3G!!!!!!!!!!!!!!

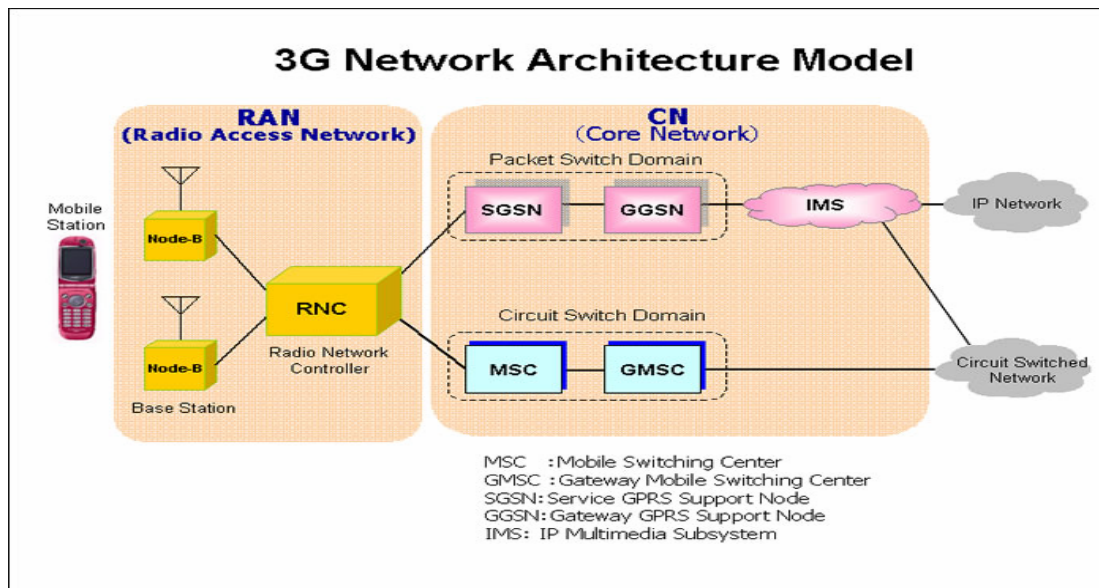
Today more telecommunication networks in the world are being upgraded to the 3G technologies because of its greater features, scalability, higher voice and data transfer rates and better performance than the 2G technologies.

Bandwidth Specifications

- 2 Mbps for the fixed or low mobility environments
- 144 kbps in higher mobility environments
- 384 kbps in the moderate mobility environments

THE EVOLUTION OF 3G





SECURITY

3G networks offer a greater degree of security than 2G predecessors. By allowing the UE to authenticate the network it is attaching to, the user can be sure the network is the intended one and not an impersonator. 3G networks use the KASUMI block crypto instead of the older A5/1 stream cipher.

ISSUE

- Expensive input fees for the 3G service licenses
- Numerous differences in the licensing terms
- Large amount of debt currently sustained by many telecommunication companies, which makes it a challenge to build the necessary infrastructure for 3G
- Lack of member state support for financially troubled operators
- Expense of 3G phones
- Lack of buy-in by 2G mobile users for the new 3G wireless services
- Lack of coverage, because it is still a new service

- High prices of 3G mobile services in some countries, including Internet access (see flat rate)
- Current lack of user need for 3G voice and data services in a hand-held device

Capabilities

3G System Capabilities
Capability to support circuit and packet data at high bit rates: <ul style="list-style-type: none"> • 144 kilobits/second or higher in high mobility (vehicular) traffic • 384 kilobits/second for pedestrian traffic • 2 Megabits/second or higher for indoor traffic
Interoperability and roaming
Common billing/user profiles: <ul style="list-style-type: none"> • Sharing of usage/rate information between service providers • Standardized call detail recording • Standardized user profiles
Capability to determine geographic position of mobiles and report it to both the network and the mobile terminal
Support of multimedia services/capabilities: <ul style="list-style-type: none"> • Fixed and variable rate bit traffic Bandwidth on demand

- Asymmetric data rates in the forward and reverse links
- Multimedia mail store and forward
- Broadband access up to 2 Megabits/second

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